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10/824,440	04/15/2004	Kevin Lin	973,28.05	6295

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _07 January 2008_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-17_ is/are pending in the application.

    4a) Of the above claim(s) _14_ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1,4,12,13 and 15_ is/are rejected.

7) ☒ Claim(s) _2-3, 5-11, 17-17_ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

Response to Amendment and Argument

1.   This communication is in response to applicant's 01/07/2008 Amendment in the application of Lin et al. for a "Controlling method and device for data transmision" filed 04/15/2004.   This application claims priority from Provisional application 60/495,116 filed August 15, 2003. The amendment and response has been entered and made of record. Claim 14 has been canceled per Applicant's request, and claims 1-8, 10-12, 15 have been amended. Claims 1-13 and 15-17 are pending in the application.

2.   Applicant's remarks and argument to the rejected claims are insufficient to distinguish the claimed invention from the cited prior arts or overcome the rejection of said claims under 35 U.S.C. 103 as discussed below. Applicant's argument with respect to the pending claims have been fully considered, but they are not persuasive for at least the following reasons.

3.   In response to Applicant's argument that the reference does not teach or reasonably suggest the functionality upon which the Examiner relies for the rejection. The Examiner first emphasizes for the record that the claims employ a broader in scope than the Applicant's disclosure in all aspects. In addition, the Applicant has not argued any narrower interpretation of the claim limitations, nor amended the claims significantly enough to construe a narrower meaning to the limitations. Since the claims breadth allows multiple interpretations and meanings, which are broader than Applicant's disclosure, the Examiner is <u>required</u> to interpret the claim limitations in terms of their broadest reasonable interpretations while determining

patentability of the disclosed invention. See MPEP 2111. In other words, the claims must be

given their broadest reasonable interpretation consistent with the specification and the

interpretation that those skilled in the art would reach. See *In re Hyatt*, 211 F.3d 1367, 1372, 54

USPQ2d 1664, 1667 (Fed. Cir. 2000), *In re Cortright*, 165 F.3d 1353, 1359, 49 USPQ2d 1464,

1468 (Fed. Cir. 1999), and *In re American Academy of Science Tech Center*, 2004 WL 1067528

(Fed. Cir. May 13, 2004). Any term that is not clearly defined in the specification must be given

its plain meaning as understood by one of ordinary skill in the art. See MPEP 2111.01. See also

In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989), *Sunrace Roots Enter.*

Co. v. SRAM Corp., 336 F.3d 1298, 1302, 67 USPQ2d 1438, 1441 (Fed. Cir. 2003), *Brookhill-*

Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1298 67 USPQ2d 1132, 1136 (Fed. Cir.

2003). The interpretation of the claims by their broadest reasonable interpretation reduces the

possibility that, once the claims are issued, the claims are interpreted more broadly than justified.

See *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). Also,

limitations appearing in the specification but not recited in the claim are not read into the claim.

See *In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).* Therefore, the failure

to significantly narrow definition or scope of the claims and supply arguments commensurate in

scope with the claims implies the Applicant intends broad interpretation be given to the claims.

The Examiner has interpreted the claims in parallel to the Applicant in the response and

reiterates the need for the Applicant to distinctly define the claimed invention.

4.   Applicant asserts that there is no motivation to combine the prior art as proposed in the

office action, Starke et al. (US#6,643,763) in view of Check et al. (US#6,990,556), i.e. In

response, the Examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. *In re Nomiya*, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ 209 (CCPA 1971). It must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443, F.2d 1392; 170 USPQ 209 (CCPA 1971). Furthermore, on page 13, last paragraph, Applicant's argument with respect to the claims 1, 4, 12-15 on which the Applicant relies in the Fig. 1B and the specification as filed. However, It is the claims that define the claimed invention, and it is claims, not specifications that are anticipated or unpatentable. *Constant v. Advanced Micro-Devices Inc.,* 7 USPQ2d 1064.

Since no substantial amendments have been made and the Applicant's arguments are not persuasive, the claims are drawn to the same invention and the text of the prior art rejection can be found in the previous Office Action. Therefore, the Examiner maintains that the references cited and applied in the last office actions for the rejection of the claims are maintained in this office action.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of
>
> this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter
>
> as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which
>
> said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6.   This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7.   Claims 1, 4 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Starke et al. (US#6,643,763) in view of Check et al. (US#6,990,556).

With respect to claims 1, 4 and 12, the references disclose a controlling method and

device for data transmission in the dual buffer architecture, according to the essential features of

the claims. Starke et al. (US#6,643,763) provide methods of transferring data between a first

processing engine and a second processing engine. The method includes: establishing a register

pipe-between the first processing engine and the second processing engine, the register pipe may

include at least one first register in the first processing engine and at least one second register in

the second processing engine; and transferring data between the first processing engine and the

second processing engine using the register pipe (*piping processor for connecting the first

transmission channel and second transmission channel*), wherein data is transferred between the

first and second processing engines without passing through main memory of the multiprocessor

computer system to which the first processing engine and second processing engine belong (Fig.

1; See the Abstract and Col. 2, lines 32 plus).

However, Starke does not expressly disclose the step of adjusting a transmission direction

of the system bus according to a transmitting direction. In the same field of endeavor, Check et

al. (US#6,990,556) disclose in Fig. 3 a diagrammatic illustrated a method and system for

accessing the same cache doubleword for multiple simultaneous requests where the cache has a

plurality of cache interleaves with an address sliced directory. The processor includes cache

storage having an address sliced directory lookup structure. A same doubleword detection unit

receives a first instruction including a plurality of first instruction fields on a first pipe and a

second instruction including a plurality of second instruction fields on a second pipe. The same

doubleword detection unit generates a same doubleword signal in response to the first instruction

fields and the second instruction fields (*adjusting a transmission direction of the system bus*).

The cache storage reads data from a single doubleword in the cache storage and simultaneously

provides the doubleword to the first pipe and the second pipe in response to the same

doubleword signal (Col. 1, lines 59 plus and Col. 3, lines 41 plus). Check further teaches in Fig.

4 a block diagram of an exemplary same doubleword detection unit 309. Same doubleword

detection unit 309 includes index field logic 400, base register field logic 401, displacement field

logic 402 and opcode field logic 403. A same doubleword detector 404 receives and output from

logic devices 400 403 to detect whether the same doubleword of cache is addressed by both

instructions. The opcode fields 303 and 307 are examined by opcode field logic 403 to

determine if the instruction has an index register field 203 and the format of the displacement

field which may include a one-part field 201 or a two-part field 204 and 205. The presence or

absence of an index register field and the format of the displacement field is provided to the

same doubleword detector 404. The base register fields 301 and 305 are checked for equality at

base register field logic 401. The result of the comparison is provided to the same doubleword

detector 404. If the base register fields 301 and 305 are not equal, then the two instructions are

not requesting the same doubleword of cache. Thus, the same doubleword signal 313 will not

enable multiple simultaneous same doubleword access. The results of the index field logic 400,

base register field logic 401 and displacement field logic 402, along with the information on

what fields exist from opcode field processor 403 are used by same doubleword detector 404 to

determine if the addresses for the two instructions that were decoded in the decode cycle 100 are

likely from the same cache doubleword. If so, the same doubleword detection unit 309 issues

same doubleword signal 313. The processor access will read the doubleword once, based on the

initial request, and provide the result simultaneously to both pipes (e.g., through operand buffers

associated with each of the pipes). Thus, simultaneous access to the same cache doubleword is

provided to multiple pipes in the same return cycle (Col. 4, lines 6 plus).

Regarding claim 13, It's noted that the optoelectronic system comprises a VCD player,

DVD player, and so on are well known in the art. Optoelectronic memories such as CDs

(Compact Disks), DVDs (Digital Versatile Disks), holograms or three-dimensional barcodes can

be used as electronic memories at least for the ROM.

Regarding claim 15, the use of a channel codec for performing channel encoding and decoding functions are also well known in the art of data transmission.

One skilled in the art would have recognized the need for effectively and efficiently facilitating the data transmission in dual buffer architecture, and would have applied Check' novel use of the processor for providing simultaneous access to the same data for a plurality of requests into Starke's teaching of the structure for implementing a register pipe between processing engines of a multiprocessor computing system. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Check's system and method for simultaneous access of the same doubleword in cache storage into Starke's register pipe for multi-processing engine environment with the motivation being to provide a controlling method and device for data transmission.

Allowable Subject Matter

8.   Claims 2-3, 5-11, 16-17 are objected to as being dependent upon the rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

9.   The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest wherein parts of data processing procedures of the first transmission channel during the interval comprising: caching and decoding data in the first transmission channel while the data transmitted from the first transmission channel to the system bus; encoding and storing data to a storage media while the data transmitted from the system bus to the first transmission channel; utilizing the first

transmission channel for caching a first source data when a first command issued by the

command processor is read/write; and utilizing the second transmission channel for caching a

second source data when a second command issued by the command processor is write/read,

wherein the second command performed after the first command; wherein if the first processing

procedures comprising a data decoding, the pair of pipe indices comprising: a write pipe index

for indicating amount of cached data in a corresponding transmission channel with the first

processing procedures; a decode pipe index for indicating amount of decoded data; and a host-

pipe sector data send index for indicating a mount of data sent from the corresponding

transmission channel to a command processor; wherein if the first processing procedures

comprising a data encoding, the pair of pipe indices comprising: a host-pipe sector data get index

for indicating amount of data sent from a command processor to corresponding transmission

channel; an encode pipe index for indicating amount of encoded data; and a record pipe index for

indicating amount of encoded data sent from corresponding transmission channel to a storage

medium, as specifically recited in the claims.

10.   Any comments considered necessary by applicant must be submitted no later than

the payment of the issue fee and, to avoid processing delays, should preferably accompany the

issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."   *Conclusion*

11.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

        The Lin (US#2005/0111481) is cited to show the method and system for transmitting

data through multi path bus.

The Rai (US#2005/0283634) is cited to show the method and apparatus for adaptively adjusting the bandwidth of a data transmission channel having multiple buffered paths.

The Ehmann et al. (US#2003/0056052) is cited to show the data communication bus traffic generator arrangement.

The Wilkinson et al. (US#5,805,915) show the SIMIMD array processing system.

The Temple (US#5,778,221) is cited to show the system for executing asynchronous branch and link in parallel processor.

The Kogge (US#5,475,856) show the dynamic multi mode parallel processing array.

The Kan (US#5,355,508) is cited to show the parallel data processing system combining a SIMD with a MIMD unit and sharing a common bus, memory, and system controller.

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP ' 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The

examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jay Patel, can be reached on (571) 272-2988. The fax phone number for the

organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (571) 272-2600.

14.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status information for

unpublished applications is available through Private PAIR only. For more information about

the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to

the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-

9197.

Mphan

03/26/2008

/Man Phan/

Primary Examiner, Art Unit 2619